

23969-P001US



PATENT

In re Application of:
Brian Doege et al.

For: METHOD FOR BACTERIALLY
TREATING SMALL-TANK TOILET
SYSTEMS AND AN APPARATUS FOR
USING SAME

Atty Dkt: 23969-P001US

Serial No: 09/723,549

Filed: November 27, 2000

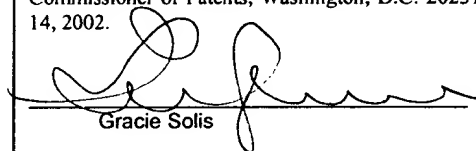
Group Art Unit: 1724

Examiner: Chester T. Barry
703.306.5921

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TECHNOLOGY CENTER 1100

CERTIFICATE UNDER 37 C.F.R. 1.8

I hereby certify that this correspondence (along with any item referred as being enclosed herewith) is being deposited with the U.S. Postal Service as first class mail with sufficient postage in an enveloped addressed to Box Non-Fee Amendment, Assistant Commissioner of Patents, Washington, D.C. 20231 on August 14, 2002.


Gracie Solis

DECLARATION OF BRIAN DOEGE UNDER 37 C.F.R. § 1.132

Box Non-Fee Amendment
Assistant Commissioner for Patents
Washington, D. C. 20231

COPY OF PAPERS
ORIGINALLY FILED

Dear Sir:

1. My name is Brian Doege. I am one of the inventors on the above-referenced patent application. I am also the President of Biological Systems, Inc. ("Bio-Sys"), the Applicant of this Application.

2. In making the invention, I and the other co-inventors of the present invention set out to solve problems that were being encountered with transportation toilet systems, and particularly with transportation recirculation tank toilet systems.

3. Conventional practice was that recirculation tank toilet systems in transportation applications utilized powdered product in water-soluble pouches or solid product in tablet form. The product basically consisted of a filler material, a powerful bactericide (such as hexachlorophene or a solid quaternary sanitizer), dye, and a perfume. This bactericide was used to inhibit bacterial breakdown. The dye sometimes was itself a powerful antibiotic derivative

(sulfa) and also acted as a bactericide (such as acid blue). Finally, the perfume additive was used to mask any odor that was still produced. This basic process was intended to kill all bacteria in the recirculation tank toilet system. It also attempted to inhibit any further natural bacterial action that could produce odors, to mask any odor that might still be produced, and to disguise the nature of the flush liquid, which is basically a recirculated urine/water mixture with some small bits of fecal matter mixed in.

4. One of the criteria that Bio-Sys investigated was whether a bacterial based product could be used in the recirculation tank toilet systems instead of a bactericide based product. This was because the bacteria would eliminate the odors and not merely mask them. Based upon Bio-Sys's own products, we knew that bacteria based products had been utilized in other systems, *i.e.* septic systems, and to clean out black water retention tanks.

5. However, we also knew from our own testing that prior attempts to utilize a bacterial based product (that had not contained surfactant) in a free standing portable toilet system had failed. One of the primary reasons this testing failed was because the byproduct of the bacterial action generated gaseous ammonia, which was quite pungent and unpleasant for the users. For similar reasons, we believed that using a bacterial based product would not work in recirculation tank toilet systems.

6. Subsequently, we discovered that adding surfactant to the bacterial based product had the unexpected effect of overcoming this gaseous ammonia problem. We believe this is because the surfactant had a buffering effect.

7. Presently, Bio-Sys's bacteria/surfactant product for use in transportation recirculation tank toilet systems is designated as Bio-Sys's MTC-2010 product. The liquid, powder, and tablet forms of this product are designated as MTC-2010-L, MTC-2010-P, and MTC-2010-T, respectively.¹

¹ Prior to the finalization of the nomenclature, various interim designations were used for these bacterial products for use in transportation recirculation tank toilet systems. As used herein, MTC-2010 refers to these prior designated products.

8. Amtrak is the only national passenger railroad system in the United States. Metro North Railroad is one of the three largest commuter railroad systems in North America; it is one of the three railroad systems of the Metro Transit Authority, which services New York City and its surrounding areas.

9. Both Amtrak and Metro North tested Bio-Sys's MTC-2010 product. Based on the comments received from the personnel at Amtrak, Metro North and others, no other product like Bio-Sys's has ever been seen or marketed to them throughout their railroad careers for use in recirculation tank toilet systems, which careers span many years.

10. Before the testing at Amtrak, the personnel at Amtrak indicated that they were very skeptical that a bacterial based product would be an effective treatment for a transportation recirculation tank toilet system.

11. Based upon comments by these same Amtrak personnel, Bio-Sys's MTC-2010 product was successfully tested in its recirculation tank toilet systems.

12. Attached hereto at Exhibit A is an entry in my telephone log reflecting some of Amtrak's comments respecting Bio-Sys's MTC-2010 product (then referred to as MTC-2000 liquid) after tests in Amtrak's recirculation tank toilet system. ✓

13. Based upon comments by Metro North's personnel, Bio-Sys's MTC-2010-T product was successfully tested.

14. At the time of Amtrak's and Metro North's testing of Bio-Sys's MTC-2010 products, both of them informed Bio-Sys they were under long term contracts with their current suppliers for treatments of their recirculation tank toilet systems.

15. Based upon comments I have received from Amtrak personnel, Amtrak intends to convert from using a bactericide based product to a bacterial based product when its next bidding process occurs for treatment of its recirculation tank toilet systems. As of the date of execution of this declaration, such bidding process had not yet begun.

16. Metro North's contract with its supplier is concluding sometime around November, 2002. In late May, 2002, Metro North issued an RFP requesting bids for treatment of

its recirculation tank toilet system. Attached hereto at Exhibit B is a portion of this RFP. This was its first RFP for such a bid subsequent to Metro North's testing of Bio-Sys's MTC-2010-T product.

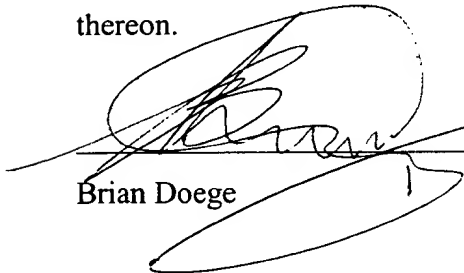
17. Before this bid request, Metro North had been utilizing bactericide based products for such treatment (which we understand to have been a bactericide product, Hex Tabs). In its RFP (as reflected in Exhibit B), Metro North required its suppliers to bid a bacterial based treatment for use in its recirculation tank toilet systems, and, more particularly, set the standard as Bio-Sys's MTC-2010-T product, which Metro North assigned its own product specification as MS-C-302.

18. Furthermore others, such as Miami Transit Authority and Dallas Transit Authority, have also converted from bactericide based products to Bio-Sys's bacterial based products for use in transportation recirculation tank toilet systems. Miami Transit Authority now utilizes Bio-Sys's MTC-2010-P product, and Dallas Transit Authority now utilizes Bio Sys's MTC-2010-L product.

19. We understand, based upon our discussions with Amtrak and Metro North, that they are going to convert from bactericides to bacterial based products because these systems more effectively solve the problems encountered by transportation recirculation tank toilet systems. We further understand this is the reason why Miami Transit Authority and Dallas Transit Authority have already converted. All of them are doing so (or have done so) even though Bio-Sys's bacterial based product will cost them around two to three times the cost of the bactericide based product they previously utilized.

20. The industry for selling treatments for transportation recirculation tank toilet systems is quite competitive. While there are many bactericides that are being offered for such treatments, we understand Bio-Sys is the first company that is selling bacterial based products for such treatments. Since the time Bio-Sys first introduced its MTC-2010 product, at least three other companies have copied this product for use in recirculation tank toilet systems, including the two largest United States producers of bactericide based products.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Brian Doege

8/02/02
Date

AUSTIN_1\194887\1
23969-P001US 08/02/2002

Jim called - says will need to make
price of BAT-9 - I said that we were
unable to do an analysis now could be
hold off - we would order 48 pails more
at all times be a premium OK

Mark called re CES meeting next on
Larry Meyers in Dallas - They feel we should
pay them commission because they tried the
product to him at pest show - Recalled
me w/ reference to CES. I said let's
think about that B-Y we let precedent -
Meyers only orders small units - I get
order to go and have review for 3000
product commission @ 2.7% - would only be 10%
approx - as I don't care. Mark to
CB CES and negotiate.

Mark - Mike talked to Arthur Beech Grove
they very pleased with product - he for arrange
test for our MTC - 2000 liquid with either
Chicago or Wadsworth - need to get with
alteria head of dairy maintenance - I told Mark, Jim
had "LC" level of microbes in new liquid
see if they liked results.

Ann - She Hahito wants to get samples together
for MTH Japan - needs new block forms
also BTAT samples MTH will send
for better liquid to use for lab tests
next week

METRO-NORTH RAILROAD
347 Madison Avenue, 13th Floor
New York, N. Y. 10017-3739

THIS IS A REQUEST FOR QUOTATION
THIS IS NOT AN ORDER

Inquiry #7178-A

Bid Submitted By: Biological Systems Inc. #8

Address: P.O. Box 92911

City, State, Zip Code: Austin, TX 78709-9333

Attention: Robert Driggers, Manufacturers Rep.

***** Vendor Must Complete the Following Information *****

Federal I.D. Number: _____

Telephone Number: _____ Fax Number: _____

FOB: Destination – Freight Included

Point of Shipment: _____

Payment Terms: _____

Quotation Date: _____

Name of Manufacturer of Material: _____

Bid Submitted by (Firm Name): _____

Print Name & Title: _____

Authorized Signature: _____

This quotation will not be withdrawn for 60 days from the bid opening date

Signature: _____

Complete and Submit This Form with all Required Signed Documents

METRO-NORTH RAILROAD
347 Madison Avenue, 13th Floor
New York, N. Y. 10017-3739

THIS IS A REQUEST FOR QUOTATION
THIS IS NOT AN ORDER
Date: 5/24/2002

ATT: Patricia Calcutti, Buyer, Purchasing Department(212) 340-3005

Inquiry #7178-A, Bids are due no later than 2:30 PM on June 25, 2002 at which time all bids will be publicly opened and read.

LATE BIDS WILL NOT BE ACCEPTED.

GENERAL CONDITIONS OF INQUIRY - PLEASE READ PRIOR TO BID SUBMISSION

1. If you elect not to submit a quotation, please furnish the information requested on the attached "No Bid Vendor Response Form".
2. All material shall be manufactured/delivered in accordance with the General Conditions of the Inquiry as herein noted, and the attached:
 - Bid Quote, attached forms and certifications
 - Terms and Conditions
 - Specifications/Drawings where applicable.
3. It is recommended that each prospective bidder carefully review all information in the inquiry prior to quoting prices. All questions in regard to the bid should be submitted in writing to this office no later than ten (10) working days prior to the bid due date via fax (212) 340-3282/3250 to the procurement personnel's attention.
4. Additional provisions Metro-North may decide to include in this bid will be issued as an **Addendum** to the bid and will be sent by fax or mail to each firm recorded as having been sent a copy of the bid.
5. **Faxed bids will not be accepted.** All bids must be sealed and submitted in the envelope provided or in a sealed package with the green bid envelope affixed to the front. Or if green envelope not used bid number must appear on the outside envelope. It is the vendor's responsibility to ensure that sealed bids are received no later than date and time indicated. **LATE BIDS WILL NOT BE ACCEPTED. THEY WILL BE RETURNED TO VENDOR UNOPENED.**
6. Metro-North Commuter Railroad, a government instrumentality of The State of New York, is exempt from State and Local Taxes and Federal Excise Taxes on its purchases in the States of New York and Connecticut. Please include in your price quotation all discounts accorded to other agencies of the State of New York and Connecticut.
7. Prices quoted must be **FOB DELIVERED, freight included.**
8. Metro-North reserves the right to accept or reject any or all quotations.

Appendix III

Item Description

Destinations: Croton, NY 10520 and New Haven, Ct. 06506

<u>Quantity</u>		<u>Unit Price</u>	<u>Total</u>
195,000 packs	Microbial-Based Toilet Treatment Tablets for use in MNR recirculating toilets. Per Metro-North Railroad Specification# <u>MS-C-302. (Attached)</u> Bio-Sys MTC-2010-T Or approved equal	_____ PK	\$ _____

Manufacturer Name _____

Manufacturer Prod. No. _____

Projected Delivery Date for initial release quantity > _____ weeks ARO.

Terms and Conditions

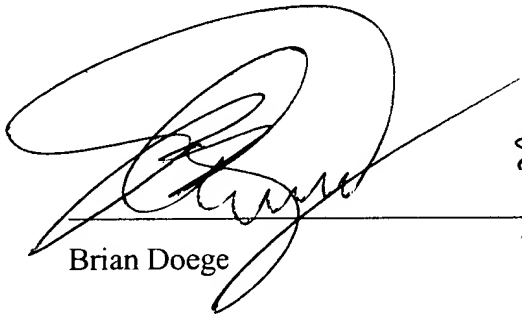
This inquiry will result in the issuance of Two separate Two (2) Year Blanket Release Orders, in effect for two-years from date of award, material to be released as required. Quantities are as follows:

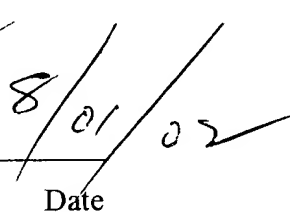
- 120,000 packs for delivery to Croton, New York 10520. Minimum release quantity will be 5,000 packs. 75,000 packs for delivery to New Haven, Ct. 06506. Minimum release quantity will also be 5,000 packs.

2. Unit prices **MUST** include all delivery charges to these destinations and remain firm for the two-year period specified.
3. The vendor is advised that the quantities specified above are estimates only and are not intended to be relied upon or taken as final. Actual quantities ordered may exceed or fall short of expected usage. Metro-North Railroad is in no way obligated to purchase any residual stock remaining in the vendor's inventory at the conclusion of these contracts.
4. Award will be made on the basis of the Lowest Gross Sum Bid.

4. Attached hereto as Exhibits A-D are entries from my Telephone Log, each of which pre-dates May 9, 2000 (the dates have been redacted). These entries of Exhibits A-D reflect a portion of the telephone conversations I had with one or more of the co-inventors respecting the invention of the Application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Brian Doege


Date

Spoke to Mark - he and Mike discussed problem Antark is having with their computer tablets. They are using a poor product - dissolving for tablets. Have order problem and disposal. Can we fix?

CB ~~10~~ I didn't think so but. Ill talk to Sam

Wt. Ken Yarn - P/M re: Kunita and the Japanese deal. They own so much for development of block - now nothing - what is up? We need definite commitment re: order? quantities and specs. - Ken will get back to me with details.

Talked to Mark re: Board meeting and Annual meeting - It was decided to hold the meetings in Austin on the weekend of
 CB ~~10~~ - Annual meeting on Board meeting on. There are issues - debt restructuring - make up of back pay and salaries for Mark + I and Speeder Brown.

Mark will present the marketing report especially potential for new business with Speeder and Antark.

New share structure needs to be reviewed

Talked to LCHA - they have lab report
on BOD'S re Japan black tests
lab report showed be ready
for now. - can p/c on
pulver results seen very good
Chris Smith says that 3000 ppm -
reduction to 300 ppm is O.K. on
pulmonary. More later

Talked to Barry Graham - he wants
pricing re - BMIC-7 if he buys
48. per gal. gallet load. - shed
min price level 5 he will get bid
to us for ppay as he has no credit
established

Spoke to Mark re. Airtrak problem
get details on recirculation facilities in
Chicago - they are smaller tanks -
and use black water to flush -

Need: perfume to disguise odor
dye to disguise poop
Current product is inert - can
we use active bacteria?
order problem is chief complaint of
customers

I need to talk Saul to determine if we
can produce or modify our black clean
for daily maintenance.

Get call from George - Parvita is apparently
having difficulty with funds - Aysalayan
but can't get full amount of \$ - He is going
to talk to Cosmo - to see if they can do a
deal - Surp order still imminent - Need
to coordinate Cosmo + Skylark - Truss
- Construction supt for Skylark likes Bob Thistle
(He's the Mafia type) ... Don't worry - It
Hurry to get back to up in next week
or so with answer.

Talked to Saul discussed what we would
need to do to modify BMIC-7 for the
Antrak daily maintenance problem - discuss
happening effect of surfactants on the antrum
and other molecules in the tank - He
suggests broodary amount of truss
in formula. - Can we use AK-200
as carrier - should not be a problem. We will
arrange test with Antrak. -

Wend called - orders from Speeder -
will fax note. 4x15 BAT. we are
short order

Talked to Don re. IDBSA - says can we
will get prices.

Jim called - says will need to increase
price of BAT-9 - I said that we were
waiting for an order now could be
hold off - We would order 48 pairs mini
at all times be a premium OK

Mark called re CES meeting - news on
Larry Myers in Dallas - They feel we should
pay them comm because they tried the
product to him at pest show - He called
me w/o reference to CES. I said little
things about that B-Y we set precedent -
Myers only orders small units - I get
even to go and farm now for 3000
product comm @ 2.5% - Jones and Kyle 10%
approx - as I don't care Mark to
CB CES and negotiate!

Mark - Mike talked to Antonio Becerra
They were pleased with product - he is arranging
test for our MIC-2000 liquid with either
Chicago or Wadsworth - need to get with
altera ready daily maintenance - Told Mark we
had "HC" level of microbes in new liquid
see if they liked results.

Ann - The Habito wants to get samples together
for MTH Japan - needs new block forms
also BTPT samples MTH will send
Pete Foster liquid to us for lab tests
next week

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Grace Solis

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**DECLARATION OF SAUL KRELL, MARK BRODOWICZ, AND
MICHAEL COONEY UNDER 37 C.F.R. § 1.131**

Box Non-Fee Amendment
Assistant Commissioner for Patents
Washington, D. C. 20231

Dear Sir:

1. We, Saul Krell, Mark Brodowicz, and Michael Cooney, are three of the four co-inventors of Claims 3-5, 8-20, 27-28, 39, and 42-48 of the above-identified patent application (the Application). Brian Doege is the other co-inventor.

2. Before May 9, 2000, we co-inventors conceived the invention as specifically claimed within Claims 3-5, 8-20, 27-28, 39, and 42-48 in our Application. Before May 9, 2000, we co-inventors reduced to practice the invention claimed within the Application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States

Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Saul Krell 8/2/02
Saul Krell Date

Mark Brodowicz Date

Michael Cooney Date

AUSTIN, TX 78702
23969-P001US 08-01-2002

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Date

Mark Brodowicz

Mark Brodowicz

8/2/02

Date

Michael Cooney

Date

AUSTIN_111949272
23969-P001US 08/01/2002

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Mark Brodowicz

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Date

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23969-P001US ORU1/2002